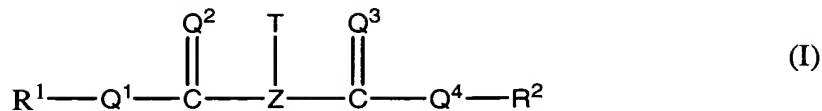


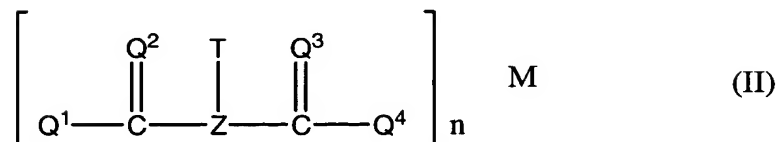
**Claims**

What is claimed is:

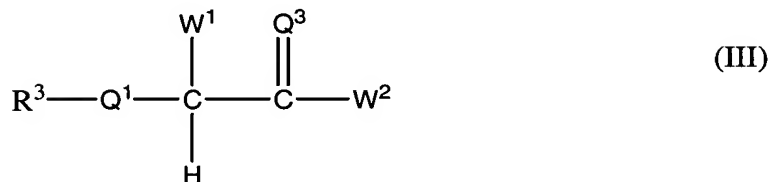
- 5           1.    A grease composition comprising:  
              (a) the reaction product of:  
                  (i) a calcium containing overbased organic acid; and  
                  (ii) at least one acid producing compound or derivatives thereof  
              selected from the group consisting of:  
10               (1) a non-polymeric hydrocarbyl substituted dicarbonyl  
                  derivative selected from the group consisting of an acid, an ester, a  
                  salt, an anhydride, ester-acid, acid-salt and mixtures thereof;  
                  (2) a copolymer derived from monomers comprising (1) an  
                  olefin; and (2) an unsaturated dicarboxylic acid anhydride or  
15               derivatives thereof; and  
                  (3) an inorganic acid containing about 2 or more acidic  
                  hydrogens; and  
              (b) an oil of lubricating viscosity,  
              wherein the calcium containing overbased organic acid contains colloidally  
20               dispersed calcium carbonate selected from the group consisting of calcite, vaterite  
              and mixtures thereof.
- 25           2.    The composition of claim 1, wherein the organic acid is a carboxylic  
              acid, a sulphonic acid, a thiosulphonic acid, a phosphorus-containing acid, a phenol  
              or mixtures thereof.
3.    The composition of claim 2, wherein the organic acid is a carboxylic  
              acid, a sulphonic acid or mixtures thereof.
- 30           4.    The composition of claim 1, wherein the acid producing compound is a  
              non-polymeric hydrocarbyl substituted dicarbonyl derivative derived from the  
              formulae:



or



or



5

wherein,

T is a hydrogen, a hydrocarbyl group or mixtures thereof;

Z is 1 to about 20, carbon atoms;

$Q^1, Q^2, Q^3, Q^4$  and  $Q^5$  are all independently oxygen or sulphur;

10  $R^1, R^2, R^3$  and  $R^4$  are independently hydrogen or a hydrocarbyl group;

$W^1$  is  $Q^5-R^4$ ;

$W^2$  is a hydrogen,  $Q^4-R^2$  or mixtures thereof;

M is a valence of a metal ion, an ammonium ion or mixtures thereof; and

n is an integer equal to or less than the available valence of M.

15

5. The composition of claim 4, wherein the non-polymeric hydrocarbyl substituted dicarbonyl derivative is nonyl succinic acid, decyl succinic acid, undecyl succinic acid, dodecyl succinic acid, tridecyl succinic acid, tetradecyl succinic acid, pentadecyl succinic acid, hexadecyl succinic acid, heptadecyl succinic acid, octadecyl succinic acid, octadecenyl succinic acid, nonodecyl succinic acid, the  
20 reaction product of an olefin; and a glyoxylic acid or mixtures thereof.

6. The composition of claim 1, wherein the acid producing compound is a non-polymeric hydrocarbyl substituted dicarbonyl derivative is tartaric acid, muccic  
25 acid, citramalic acid, citric acid, isopropylmalic acid, gluconic acid, malic acid, oxalic acid, succinic acid, glutaric acid, adipic acid, pimelic acid, suberic acid,

azelaic acid, sebacic acid, 1,11-undecanedicarboxylic acid, 1,12-dodecanedicarboxylic acid or mixtures thereof.

7. The composition of claim 1, wherein the acid producing compound is a  
5 copolymer derived from monomers comprising (1) an olefin; and (2) an unsaturated dicarboxylic acid anhydride or derivatives thereof comprises an olefin with about 14 to about 22 carbon atoms.

8. The composition of claim 7, wherein the acid producing compound  
10 contains an unsaturated dicarboxylic acid anhydride or derivatives thereof of maleic anhydride, methyl maleic anhydride, ethyl maleic anhydride, dimethyl maleic anhydride or mixtures thereof.

9. The composition of claim 1, wherein the acid producing compound is  
15 an inorganic acid containing about 2 or more acidic hydrogens is phosphoric acid, sulphuric acid or mixtures thereof.

10. The composition of claim 1 further comprising a thickening agent.

20 11. The composition of claim 1 further comprising a functionalised polymer containing an unsaturated dicarboxylic acid anhydride or derivatives thereof.

12. The composition of claim 1, wherein the overbased organic acid is  
25 present in the range from about 5 to about 80 weight percent of the grease composition; wherein the acid producing compound or derivatives thereof is present in the range from about 0.001 to about 25 weight percent of the grease composition; wherein the thickener is present in the range from 0 to about 20 weight percent of the grease composition; wherein the oil of lubricating viscosity is present in the  
30 range from about 0.01 to about 95 weight percent of the grease composition; wherein a functionalised polymer containing an unsaturated dicarboxylic acid anhydride or derivatives thereof is present in the range of 0 to about 25 weight

percent of the grease composition; and wherein at least one other performance additive is present in the range of 0 to about 20 weight percent of the grease composition.

5           13. A process for preparing a grease composition comprising:

(1) mixing (a) an overbased calcium sulphonate; (b) at least one acid producing compound or derivatives thereof selected from the group consisting of: (i) a non-polymeric hydrocarbyl substituted dicarbonyl derivative selected from the group consisting of an acid, an ester, a salt, an anhydride, ester-acid, acid-salt and mixtures thereof; (ii) a copolymer derived from monomers comprising (1) an olefin; and (2) an unsaturated dicarboxylic acid anhydride or derivatives thereof; (iii) an inorganic acid containing about 2 or more acidic hydrogens; and (iv) a non-overbased organic acid other than (i) containing about 4 or more carbon atoms and about 2 or more acid groups; and (c) an oil of lubricating viscosity to form an overbased mixture;

(2) adding an aqueous solvent to the overbased mixture of step (1) to form a solvated overbased mixture;

(3) heating the a solvated overbased mixture of step (2) to form a solvated colloidal mixture that contains colloiddally dispersed calcium carbonate selected from the group consisting of calcite, vaterite and mixtures thereof;

(4) removing the aqueous solvent from the solvated colloidal mixture of step (3) to form colloidal mixture; and

(5) optionally adding to the colloidal mixture of step (4) at least one other performance additive selected from the group consisting of antioxidants, rust inhibitors, metal deactivators, antiwear agents, antiscuffing agents, extreme pressure agents, foam inhibitors, demulsifiers, friction modifiers, viscosity modifiers, pour point depressants and mixtures thereof to form a grease composition.

30           14. A product prepared by the process of claim 13.

15. The use of the composition of claim 1 for imparting to a grease at least one improved property selected from the group consisting of improved water

repellence, improved water wash-off, improved thickening, increased longevity, decreased wear or mixtures thereof.